CLAIMS

1. A voltage driven array, comprising:

an array of discrete elements organized into at least one row and a plurality of columns; and

a voltage supply comprising:

a resistive element having a first end and a second end;

a first voltage applied to the first end and a second voltage applied to the second end that is different from the first voltage; and

wherein each one of a plurality of positions on the resistive element connects to a respective one of the rows or columns such that each of the different positions along the resistive element supplies a different voltage to the respective row or column than a remainder of the positions.

2. The voltage driven array according to Claim 1, wherein a resistive element is constructed of polysilicon.

3. The voltage driven array according to Claim 1, further comprising a third voltage applied to the resistive element at a position between the first end and the second end.

4. The voltage driven array according to Claim 1, wherein each of the columns connects to the resistive element.

5. The voltage driven array according to Claim 4, wherein the voltage supply is adapted to supply the array with voltages in a time delay multiplexed fashion.

6. The voltage driven array according to Claim 1, further comprising:

a second voltage supply and a third voltage supply; and

wherein each of the voltage supply, the second voltage supply and the third voltage supply provides the rows or columns with different voltages than a remainder of the voltage supply, the second voltage supply and the third voltage supply.

7. The voltage driven array according to Claim 6, wherein:

said discrete elements are illumination elements;

the voltage supply supplies each of the columns or rows with voltages sufficient to generate a first color in the illumination elements;

the second voltage supply supplies each of the columns or rows with voltages sufficient to generate a second color in the illumination elements; and

the third voltage supply supplies each of the columns or rows with voltages sufficient to generate a third color in the illumination elements.

8. The voltage driven array according to Claim 7, wherein the first color is red, the second color is green and the third color is blue.

9. The voltage driven array according to Claim 1, wherein each of the discrete elements is an illumination element.

10. The voltage driven array according to Claim 9, wherein each of the illumination elements is an interferometer.

11. The voltage driven array according to Claim 10, wherein each of the illumination elements further comprises:

an outer semitransparent plate;

a reflective middle plate positioned substantially parallel to and spaced from the semitransparent plate;

a lower plate connected to a first potential; and

at least one spring positioned between the at least one reflective middle plate and the lower plate;

wherein said middle plate is connected to a second potential to generate a capacitance between the reflective middle plate and the lower plate to move the reflective middle plate to a position defining a desired distance between the reflective middle plate and the outer semitransparent plate.

12. The voltage driven array according to Claim 11, wherein the desired distance defines a wavelength of light.

13. A method for providing a variable voltage to a voltage driven array, comprising:

providing an array of discrete elements organized into at least one row and a plurality of columns;

connecting positions along a resistive element to respective columns along the array of discrete elements, wherein the resistive element has a first end and a second end; and

providing the first end with a first voltage and the second end with a second voltage that is different from the first voltage to generate a voltage in each of the columns that is different from a voltage in a remainder of the columns.

14. The method according to Claim 13, wherein said at least one row comprises a plurality of rows, and further comprising the step of activating only one of the rows to supply voltage to only the one row with the resistive element.

15. A method according to Claim 14, further comprising:

applying a new first voltage and a new second voltage;

activating a second row of the plurality of rows and deactivating the one row to supply voltage to only the second row with the resistive element.

16. The method according to Claim 13, wherein the resistive element is constructed of polysilicon.

17. The method according to Claim 13, further comprising:

applying a third voltage at a position along the resistive element between the first end and the second end; wherein the third voltage is different from the first voltage and the second voltage.

18. The method according to Claim 13, wherein:

each of the discrete elements is an illumination element having a middle reflective plate and a lower plate separated from the middle reflective plate by at least one spring element; and

the resistive element supplies a voltage to the middle element to create an attractive force between the middle element and the lower element.

19. A voltage driven array, comprising:

an array means of discrete elements organized into at least one row and a plurality of columns;

a voltage supply means comprising:

a resistive element means for reducing a voltage from a first end of the resistive element to a second end of the resistive element; and

a first voltage means for driving the first end at a first voltage and a second voltage means for driving the second end at a second voltage that is different from the first voltage;

wherein each one of a plurality of positions on the resistive element means connects to a respective one of the rows or columns such that each of the different positions along the resistive element means supplies a respective one of the columns with a different voltage than a remainder of the positions.

20. A micro electro mechanical device, comprising:

a semitransparent outer plate;

a reflective middle plate positioned substantially parallel to and spaced from the semitransparent plate;

a lower plate connected to a first potential; and

at least one spring positioned between the at least one reflective middle plate and the lower plate;

wherein the reflective middle plate connects to a voltage divider that supplies a different voltage to the reflective middle plate than at least one other micro electro mechanical device connected to the voltage divider to compensate for thickness variations among the micro electro mechanical devices between the outer plate and lower plate for the respective micro electro mechanical devices.